

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Dawn Garrett Examiner #: 76107 Date: March 29, 2004
 Art Unit: 1774 Phone Number 312-1523 Serial Number: 09/675,201
 Mail Box and Bldg/Room Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL
Rensselaer 5C75

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Electroluminescent Device
 Inventors (please provide full names): Sanae Tagami, Hidetsugu Ikeda,
Chishio Hosokawa, Takanashi Arakane
 Earliest Priority Filing Date: 9/30/1999

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search attached compounds 17 and 18
 wherein at least one substituent is alkenyl
 or amino group

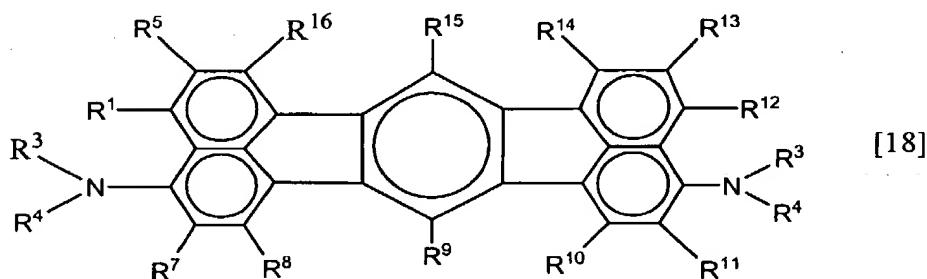
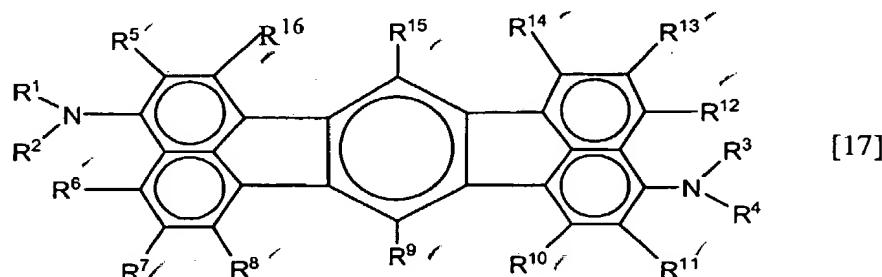
Thank you

(A partial search of compound 17 was done
 in March 2002)

(NOT MUCH REAL CLOSE)

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher:	<u>EZ</u>	NA Sequence (#)	STN <u>\$ 208.02</u>
Searcher Phone #:		AA Sequence (#)	Dialog _____
Searcher Location:		Structure (#)	<u>(3)</u> (subset) Questel/Orbit _____
Date Searcher Picked Up:		Bibliographic	<u>(enc)</u> Dr.Link _____
Date Completed:	<u>3-31-04</u>	Litigation	Lexis/Nexis _____
Searcher Prep & Review Time:	<u>5</u>	Fulltext	Sequence Systems _____
Clerical Prep Time:		Patent Family	WWW/Internet _____
Online Time:	<u>55</u>	Other	Other (specify) _____

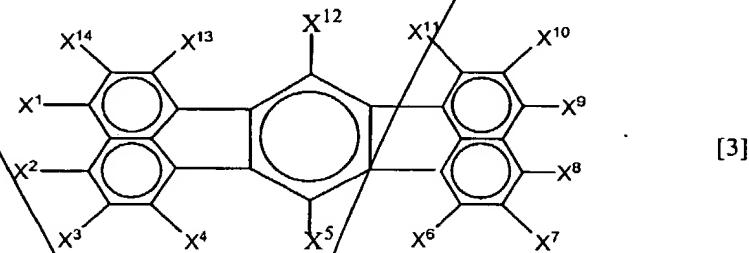
of substituted group X^{12} and X^{14} , X^3 and X^4 , X^{10} and X^{11} , and X^6 and X^7 with any ring structure in the general formula (3) is omitted:



wherein R^1 to R^4 each independently represent an alkyl group having 1 to 20 carbon atoms or a substituted or unsubstituted aryl group having 6 to 30 carbon atoms; in one or both of a pair of groups represented by R^1 and R^2 and a pair of groups represented by R^3 and R^4 , the groups forming the pair may be bonded through $-O-$ or $-S-$; R^5 to R^{16} represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a linear, branched or cyclic alkoxy group having 1 to 20 carbon atoms, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms; a pair of adjacent groups

represented by R⁵ to R¹⁶ and a pair of adjacent substituents to groups represented by R⁵ to R¹⁶ may form a cyclic structure in combination; and at least one of substituents represented by R⁵ to R¹⁶ comprises an amine group or an alkenyl group.

Claim 19 (New): A compound selected from compounds represented by the following general formula [3], [17] and [18]:



wherein X¹ to X¹⁴ each independently represents hydrogen atom, a linear, branched or cyclic alkyl group having 1 to 20 carbon atoms, a substituted or unsubstituted alkoxy group having 6 to 30 carbon groups, a substituted or unsubstituted aryl group having 6 to 30 carbon atoms, a substituted or unsubstituted aryloxy group having 6 to 30 carbon groups, a substituted or unsubstituted arylamino group having 6 to 30 carbon atoms, a substituted or unsubstituted alkylamino group having 1 to 30 carbon atoms, a substituted or unsubstituted arylalkylamino group having 7 to 30 carbon atoms or a substituted or unsubstituted alkenyl groups having 8 to 30 carbon atoms; a pair of adjacent groups represented by X¹ to X¹⁴ and a pair of adjacent substituents to groups represented by X¹ to X¹⁴ may form a cyclic structure in combination; when a pair of adjacent substituents are aryl groups, the pair of substituents may be a single group; and at least one of substituents represented by X¹ to Xⁱ, i representing a number of 12 to 14, comprises an amine group or an alkenyl group; with the premise that the combination of substituted group X¹³ and X¹⁴, X³ and X⁴, X¹⁰ and X¹¹, and X⁶ and X⁷ with any ring structure in the general formula (3) is omitted:

=> file reg
FILE 'REGISTRY' ENTERED AT 12:48:04 ON 31 MAR 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2004 American Chemical Society (ACS)

=> d his

L1 FILE 'LREGISTRY' ENTERED AT 12:28:36 ON 31 MAR 2004
STR

L2 FILE 'REGISTRY' ENTERED AT 12:37:43 ON 31 MAR 2004
0 S L1

L3 FILE 'LREGISTRY' ENTERED AT 12:37:51 ON 31 MAR 2004
STR L1

L4 FILE 'REGISTRY' ENTERED AT 12:38:19 ON 31 MAR 2004
0 S L3

L5 FILE 'LREGISTRY' ENTERED AT 12:39:03 ON 31 MAR 2004
STR L1

L6 FILE 'REGISTRY' ENTERED AT 12:40:18 ON 31 MAR 2004
25 S L5

L7 STR L1

L8 0 S L7

L9 189 S L7 FUL
SAV L9 GAR201/A

L10 0 S L1 SSS SAM SUB=L9

L11 8 S L1 SSS FUL SUB=L9
SAV L11 GAR201A/A

L12 FILE 'CAOLD' ENTERED AT 12:46:03 ON 31 MAR 2004
0 S L11

L13 FILE 'HCAPLUS' ENTERED AT 12:46:19 ON 31 MAR 2004
3 S L11

L14 FILE 'ZCA' ENTERED AT 12:46:30 ON 31 MAR 2004
3 S L11

L15 FILE 'HCA' ENTERED AT 12:46:47 ON 31 MAR 2004
40 S L9

L16 81998 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR

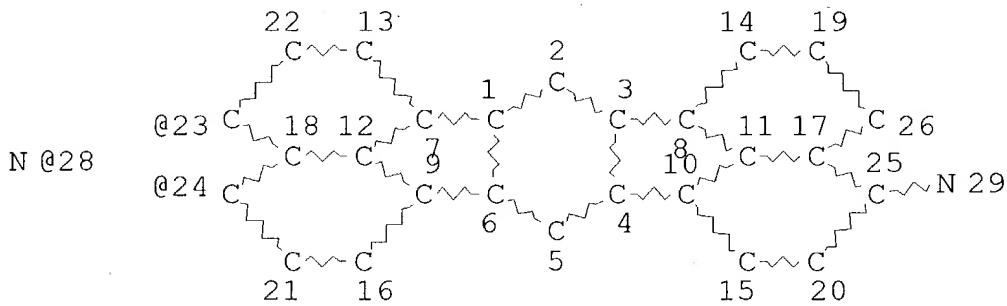
L17 12 S L15 AND L16

L18 3 S L11
 L19 9 S L17 NOT L18

FILE 'REGISTRY' ENTERED AT 12:48:04 ON 31 MAR 2004

=> d 111 que stat
 L1 STR

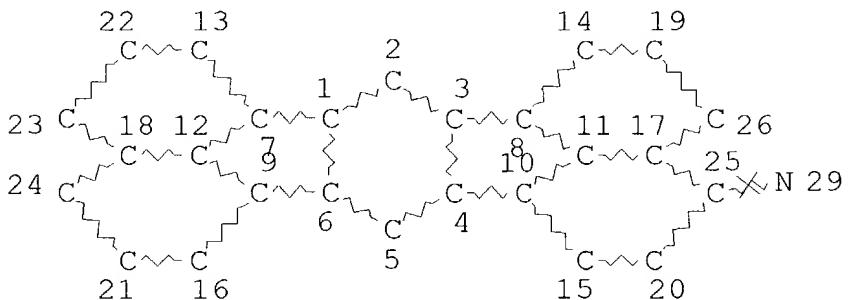
G1 30 N @33 C=C
 @35 36



VAR G1=33/35
 VPA 28-23/24 U
 NODE ATTRIBUTES:
 NSPEC IS RC AT 28
 NSPEC IS RC AT 29
 NSPEC IS RC AT 33
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
 RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 32

STEREO ATTRIBUTES: NONE
 L7 STR



NODE ATTRIBUTES:

NSPEC IS RC AT 29
 DEFAULT MLEVEL IS ATOM
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
 NUMBER OF NODES IS 27

STEREO ATTRIBUTES: NONE

L9 189 SEA FILE=REGISTRY SSS FUL L7
 L11 8 SEA FILE=REGISTRY SUB=L9 SSS FUL L1

100.0% PROCESSED 11 ITERATIONS
 SEARCH TIME: 00.00.01

8 ANSWERS

=> file hca
 FILE 'HCA' ENTERED AT 12:48:24 ON 31 MAR 2004
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
 COPYRIGHT (C) 2004 AMERICAN CHEMICAL SOCIETY (ACS)

=> d 118 1-3 ibib abs hitstr hitrn

L18 ANSWER 1 OF 3 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 139:204838 HCA

TITLE: Condensed aromatic compounds for red phosphors
 and their organic electroluminescent device

INVENTOR(S): Iwakuma, Toshihiro; Hironaka, Yoshio; Arakane,
 Takashi; Hosokawa, Chishio; Kusumoto, Tadashi

PATENT ASSIGNEE(S): Sekiyu Sangyo Kasseika Center, Japan; Idemitsu
 Kosan Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.
 CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003238516	A2	20030827	JP 2002-41472	20020219
PRIORITY APPLN. INFO.:			JP 2002-41472	20020219
OTHER SOURCE(S):	MARPAT 139:204838			

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

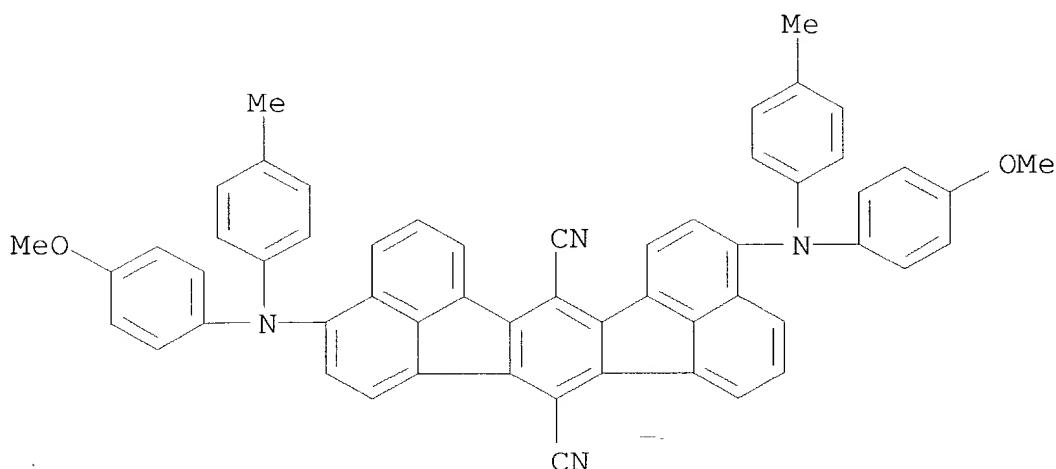
AB The condensed arom. compds. have fluoranthene skeletons bearing amino groups and electron-withdrawing groups, represented by general formulas I-IV (R1-R14 = H, C1-30 alkoxy, C1-30 alkoxy, C6-40 aryl, C3-20 trialkoxysilyl, C4-30 alkenyl, C7-40 arylalkyl, C6-40 aryloxy, CN, perfluoroalkyl, NO₂, halo, NX₁X₂; every formulas contain ≥1 NX₁X₂ and ≥1 electron-withdrawing groups as the substituents; R1-R14 may form ring structures with adjacent groups; in I, II, and V, benzene rings in the line sym. center may be replaced by naphthalene or anthracene ring; in I, R2-R3 and R5-R6, or R9-R10 and R2-R3 may form ring to give naphthalene skeletons; in IV, R5-R6 may form ring to give naphthalene skeletons; X₁, X₂ = H, C1-30 alkyl, C6-40 aryl, C7-40 arylalkyl, C3-40 heterocyclic group; X₁ and X₂ may be bonded to each other and form ring; X₁, X₂, and fluoranthene skeleton groups may be bonded to each other and form ring structure). The org. EL device contains org. thin-film layer contg. condensed arom. compds. bearing amino groups and electron-withdrawing groups, i.e., I, in an electron-transporting layer or a hole-transporting layer.

IT 585538-20-1P 585538-21-2P 585538-38-1P

(condensed arom. compds. for red phosphors for org. EL device)

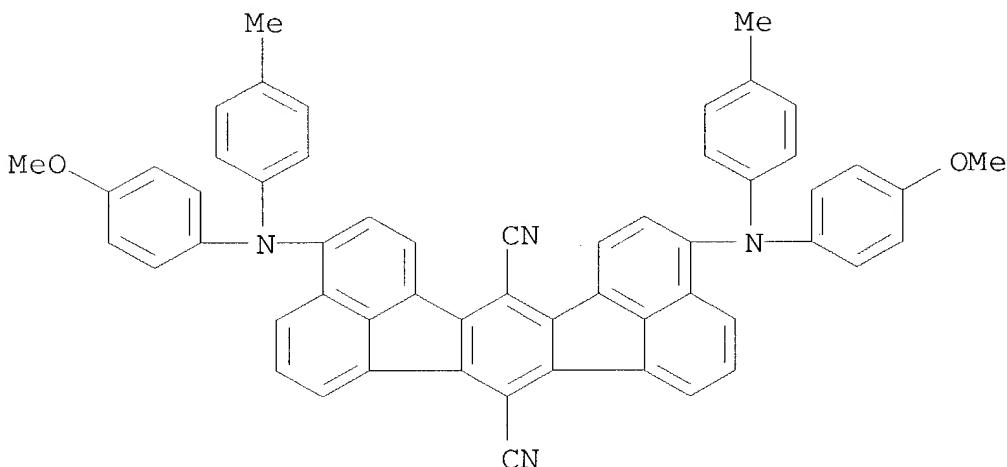
RN 585538-20-1 HCA

CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarbonitrile,
3,10-bis[(4-methoxyphenyl)(4-methylphenyl)amino]- (9CI) (CA INDEX NAME)



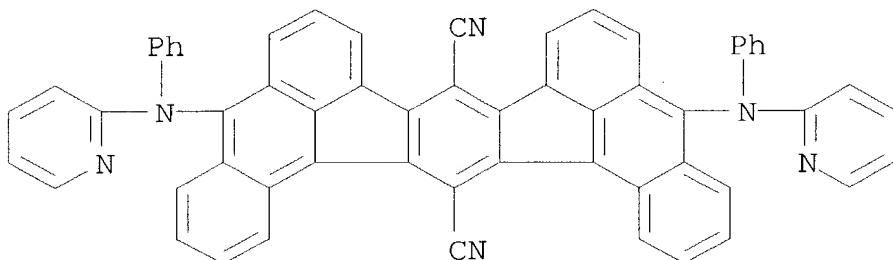
RN 585538-21-2 HCA

CN Acenaphtho[1,2-k]fluoranthene-7,14-dicarbonitrile,
3,11-bis [(4-methoxyphenyl) (4-methylphenyl)amino]- (9CI) (CA INDEX
NAME)



RN 585538-38-1 HCA

CN Benzo[1,2-a:5,4-a']diaceanthrylene-9,18-dicarbonitrile,
5,13-bis(phenyl-2-pyridinylamino)- (9CI) (CA INDEX NAME)



IT 585538-20-1P 585538-21-2P 585538-38-1P

(condensed arom. compds. for red phosphors for org. EL device)

L18 ANSWER 2 OF 3 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 138:245350 HCA

TITLE: Novel aromatic diamine compound for organic
electroluminescent element

INVENTOR(S): Iwakuma, Toshihiro; Arakane, Takashi; Hosokawa,
Chishio; Kusumoto, Tadashi

PATENT ASSIGNEE(S): Sekiyu Sangyo Kasseika Center, Japan; Idemitsu
Kosan Co., Ltd.

SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

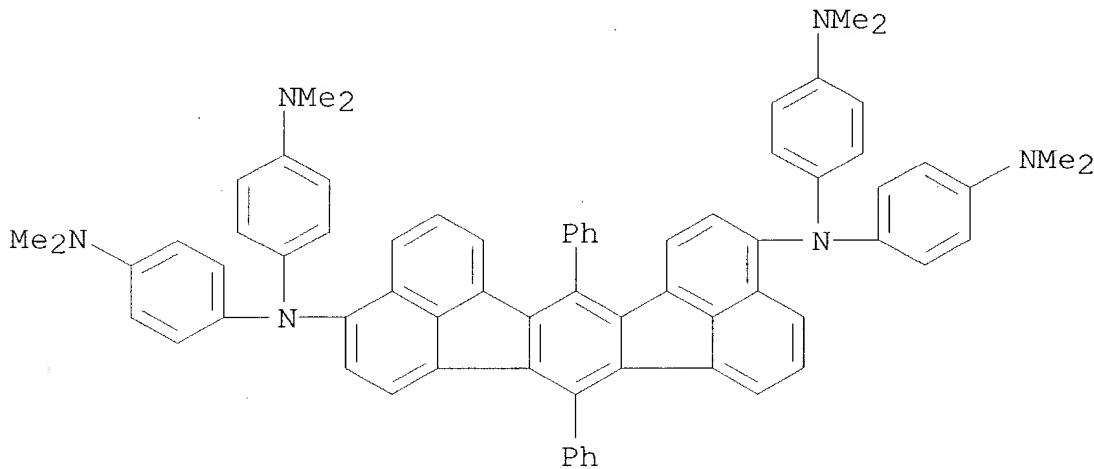
DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003081924	A2	20030319	JP 2001-279435	20010914
			JP 2001-279435	20010914

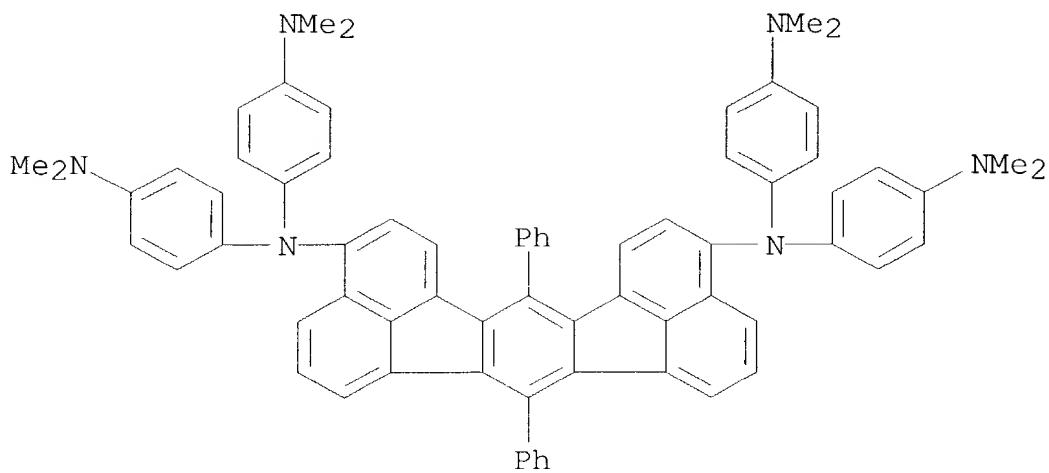
PRIORITY APPLN. INFO.: MARPAT 138:245350

AB The invention refers to a novel arom. diamine compd. for org. electroluminescent devices, Ar₃Ar₄N-X₁NAr₁Ar₂ [X_{1,2} = C₁₆-60 divalent condensed arom. ring; Ar₁₋₄ = C₆-30 arom. ring, wherein at least one is -X₂NR₁R₂; R_{1,2} = C₁-30 alkyl or C₆-30 arom. ring; R₁ and R₂ may join together to form a ring].

IT 502182-87-8P 502182-88-9P
 (novel arom. diamine compd. for org. electroluminescent element)
 RN 502182-87-8 HCA
 CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis[4-(dimethylamino)phenyl]-7,14-diphenyl- (9CI) (CA INDEX NAME)



RN 502182-88-9 HCA
 CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N'-tetrakis[4-(dimethylamino)phenyl]-7,14-diphenyl- (9CI) (CA INDEX NAME)

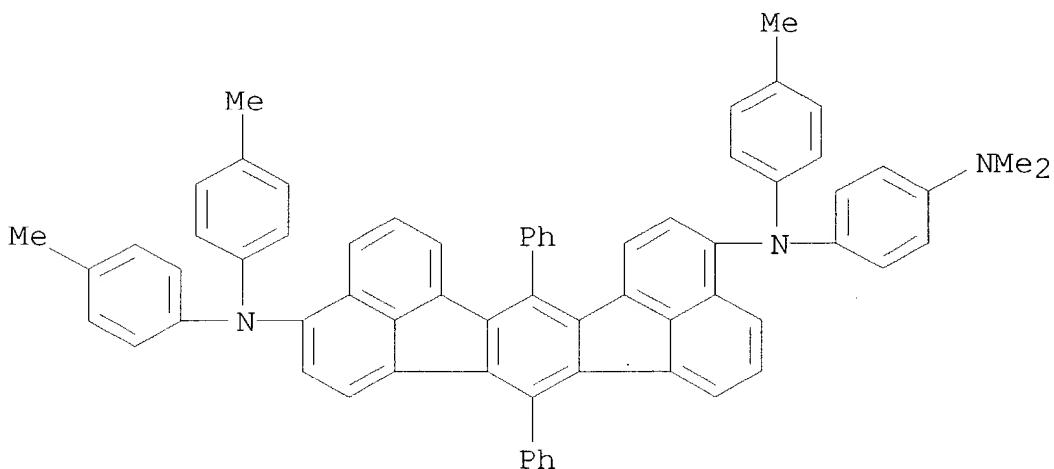


IT 502182-89-0 502182-90-3

(novel arom. diamine compd. for org. electroluminescent element)

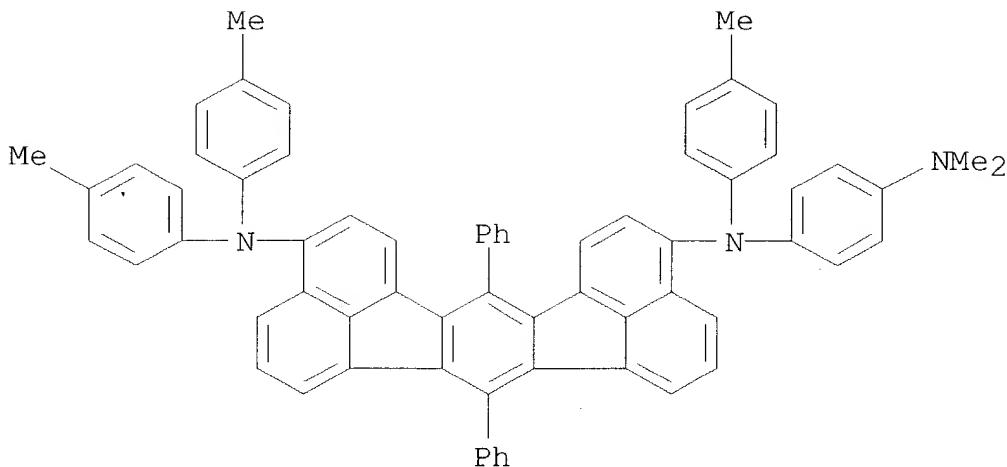
RN 502182-89-0 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N-[4-(dimethylamino)phenyl]-N,N',N'-tris(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



RN 502182-90-3 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N-[4-(dimethylamino)phenyl]-N,N',N'-tris(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



IT 502182-87-8P 502182-88-9P

(novel arom. diamine compd. for org. electroluminescent element)

IT 502182-89-0 502182-90-3

(novel arom. diamine compd. for org. electroluminescent element)

L18 ANSWER 3 OF 3 HCA COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 134:273348 HCA

TITLE: Organic electroluminescent device

INVENTOR(S): Tagami, Sanae; Ikeda, Hidetsugu; Hosokawa, Chishio; Arakane, Takashi

PATENT ASSIGNEE(S): Idemitsu Kosan Co., Ltd., Japan

SOURCE: PCT Int. Appl., 77 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023497	A1	20010405	WO 2000-JP6658	20000927
W: CN, IN, JP, KR RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1138745	A1	20011004	EP 2000-962882	20000927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
TW 490990	B	20020611	TW 2000-89120282	20000929
US 2003054200	A1	20030320	US 2002-244164	20020916
PRIORITY APPLN. INFO.:			JP 1999-279462 A	19990930
			WO 2000-JP6658 W	20000927

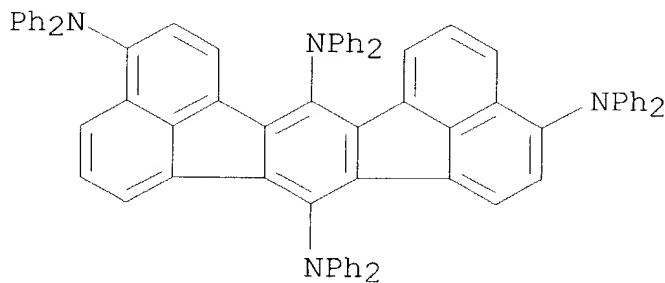
US 2000-675201 A3 20000929

AB The invention refers to an org. electroluminescent device contg. a compd. with a fluoranthan skeleton and at least one substituted amine or alkenyl.

IT 331965-30-1

(org. electroluminescent device)

RN 331965-30-1 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,7,10,14-tetramine,
N,N,N',N',N'',N'',N''',N''''-octaphenyl- (9CI) (CA INDEX NAME)

IT 331965-30-1

(org. electroluminescent device)

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 119 1-9 cbib abs hitstr hitind

(structures may not match that well)

L19 ANSWER 1 OF 9 HCA COPYRIGHT 2004 ACS on STN

139:283101 White organic **electroluminescent** device. Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003272857 A2 20030926, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-76619 20020319.

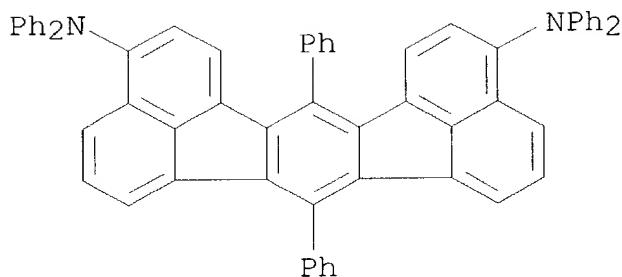
AB The invention refers to a white **electroluminescent** device comprising a blue luminescent layer and a yellow-red luminescent layer, wherein the blue luminescent layer is placed closer to the anode in order to counteract the tendency of the device toward the red color so that the yellow-red luminescent layer may be made thicker without affecting the color of the light.

IT 364765-18-4

(white org. **electroluminescent** device)

RN 364765-18-4 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST white **electroluminescent** device styryl anthracene

IT **Electroluminescent** devices

(white org. **electroluminescent** device)

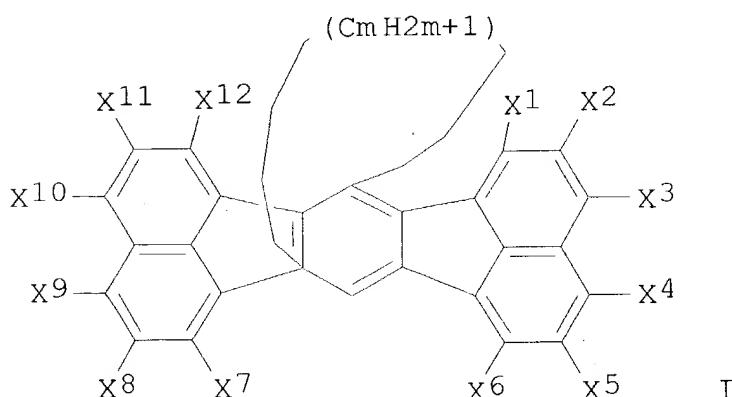
IT 186412-15-7 279672-58-1 **364765-18-4**

(white org. **electroluminescent** device)

L19 ANSWER 2 OF 9 HCA COPYRIGHT 2004 ACS on STN

138:346228 Organic **electroluminescent** component comprising acenaphtho fluoranthene. Nakatsuka, Masakatsu; Shimamura, Takehiko; Ishida, Tsutomu; Tanabe, Yoshimitsu; Totani, Yoshiyuki (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003123978 A2 20030425, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-312528 20011010.

GI



AB The invention refers to an **electroluminescent** component comprising a 7,14-alkano-acenaphtho[1,2-k]fluoranthene I [m = 2 -

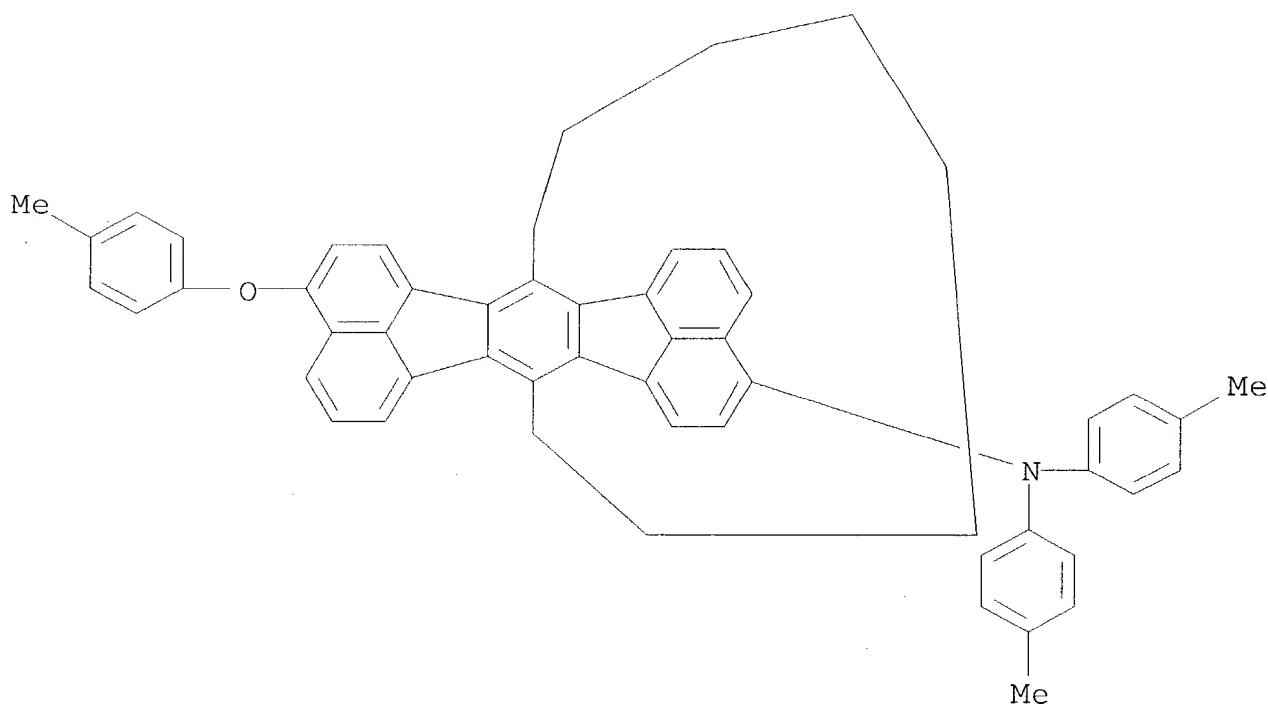
20; X1-12 = H, halo, straight chain or branched or ring alkyl, alkoxy; (un)substituted aryl, aryloxy or amino, where adjacent groups may join together and aliph. rings].

IT 515844-31-2 515844-35-6 515844-36-7
 515844-37-8 515844-39-0 515844-40-3
 515844-45-8 515844-46-9 515844-47-0
 515844-48-1

(org. **electroluminescent** component comprising
 acenaphtho fluoranthene)

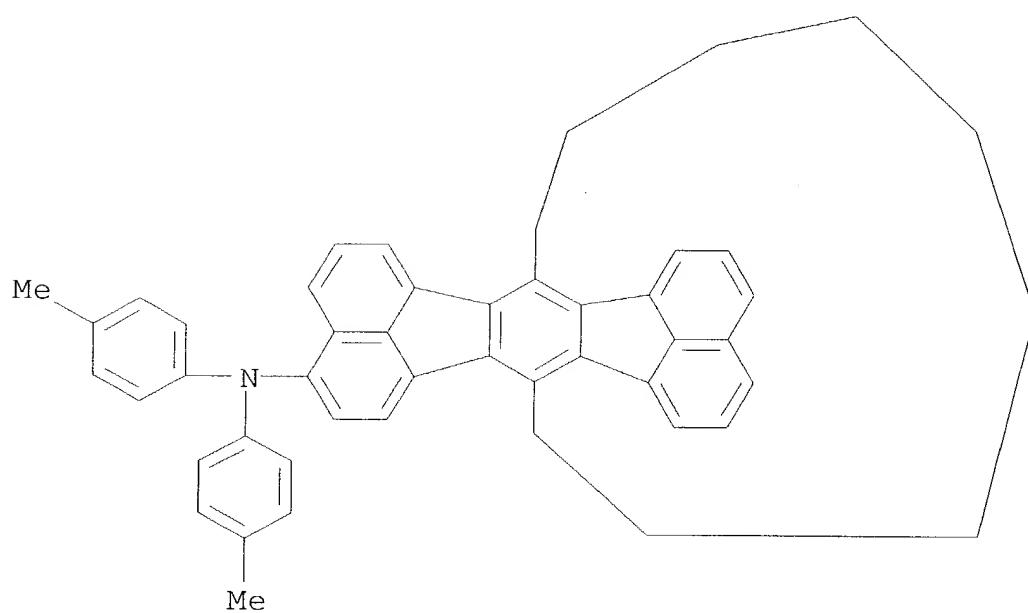
RN 515844-31-2 HCA

CN 7,14-Octanoacenaphtho[1,2-k]fluoranthen-3-amine,
 10-(4-methylphenoxy)-N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

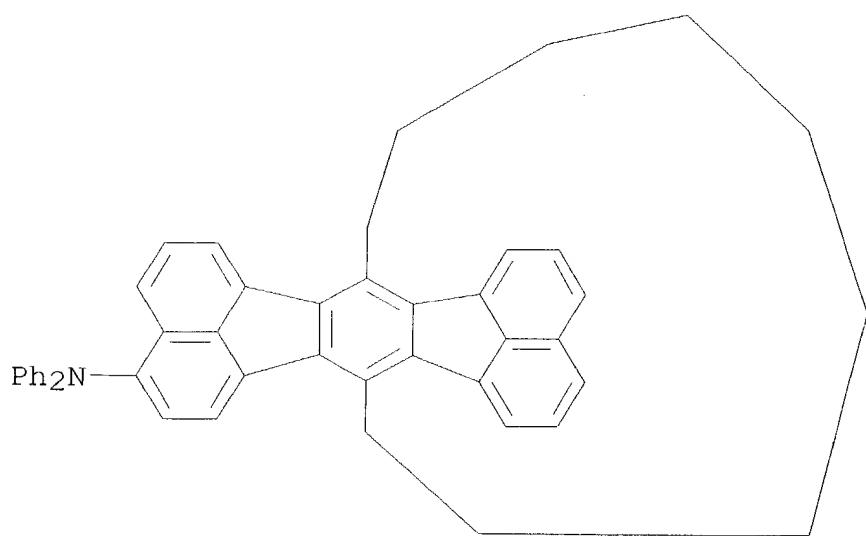


RN 515844-35-6 HCA

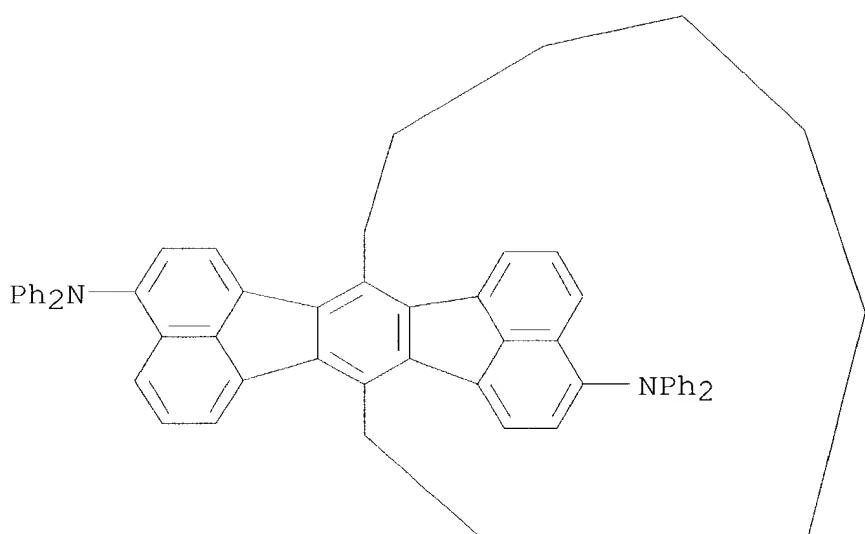
CN 7,14-Nonanoacenaphtho[1,2-k]fluoranthen-3-amine,
 N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)



RN 515844-36-7 HCA
CN 7,14-Nonanoacenaphtho[1,2-k]fluoranthen-3-amine, N,N-diphenyl- (9CI)
(CA INDEX NAME)

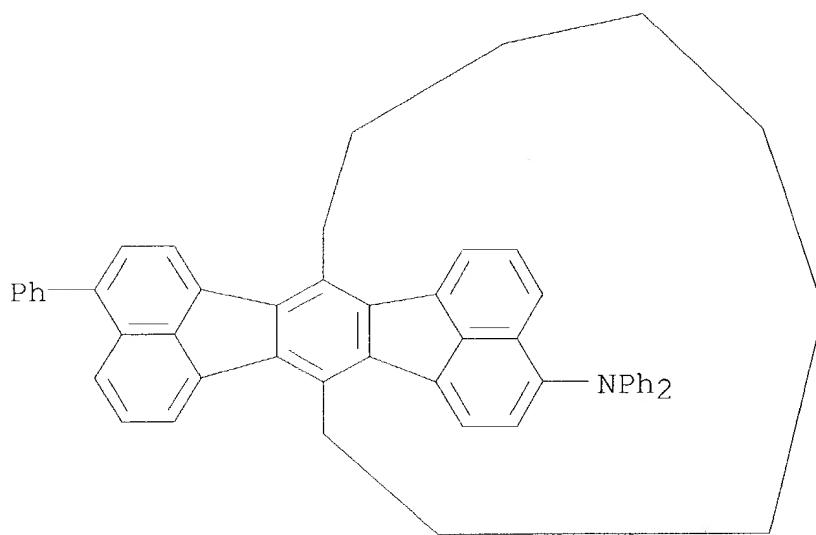


RN 515844-37-8 HCA
CN 7,14-Nonanoacenaphtho[1,2-k]fluoranthene-3,10-diamine,
N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



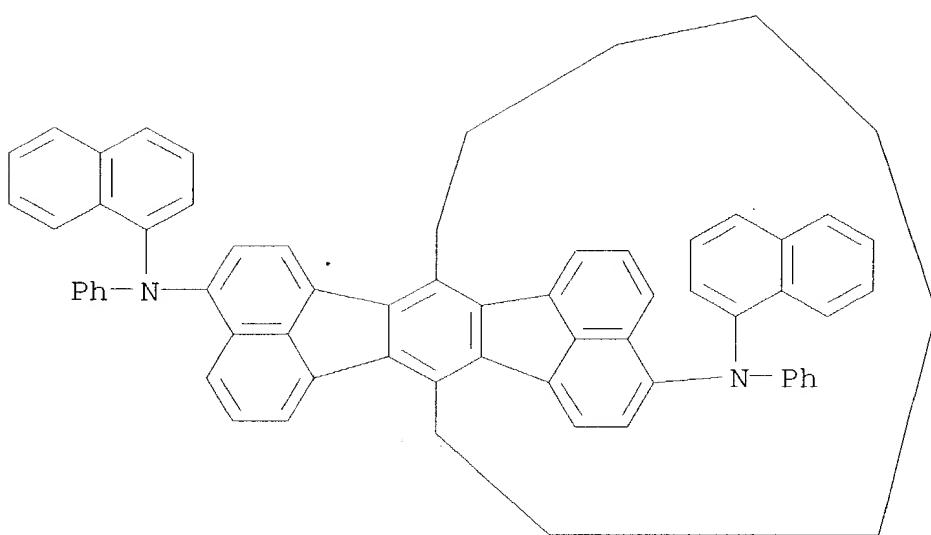
RN 515844-39-0 HCA

CN 7,14-Nonanoacenaphtho[1,2-k]fluoranthen-3-amine, N,N,10-triphenyl-
(9CI) (CA INDEX NAME)



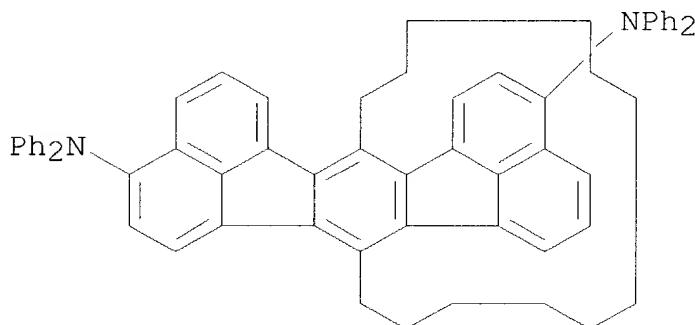
RN 515844-40-3 HCA

CN 7,14-Nonanoacenaphtho[1,2-k]fluoranthene-3,10-diamine,
N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



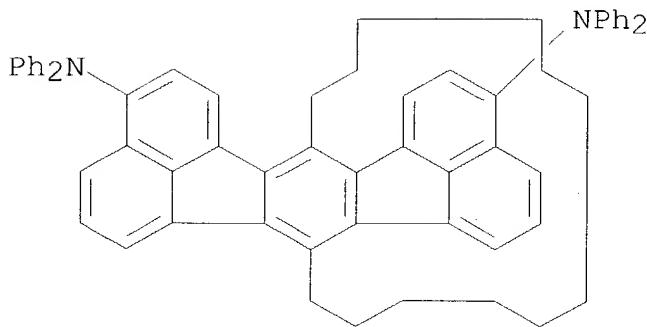
RN 515844-45-8 HCA

CN 7,14-Dodecanoacenaphtho[1,2-k]fluoranthen-3,10-diamine,
N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



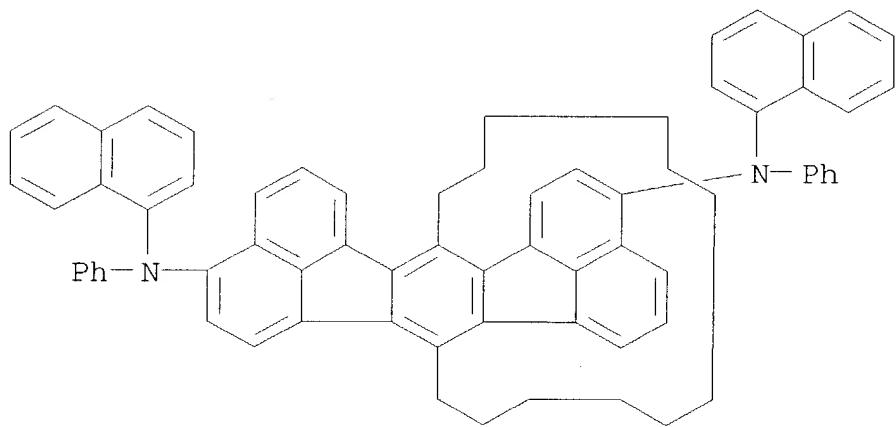
RN 515844-46-9 HCA

CN 7,14-Dodecanoacenaphtho[1,2-k]fluoranthen-3,11-diamine,
N,N,N',N'-tetraphenyl- (9CI) (CA INDEX NAME)



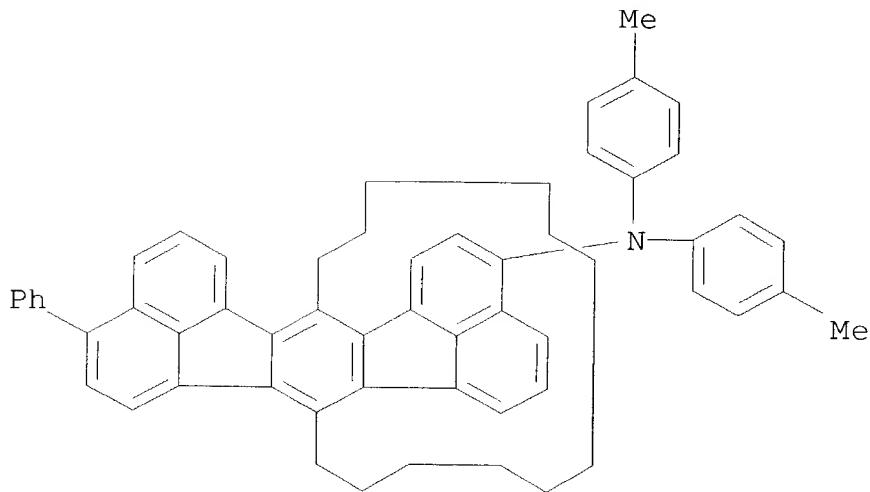
RN 515844-47-0 HCA

CN 7,14-Dodecanoacenaphtho[1,2-k]fluoranthene-3,10-diamine,
N,N'-di-1-naphthalenyl-N,N'-diphenyl- (9CI) (CA INDEX NAME)



RN 515844-48-1 HCA

CN 7,14-Dodecanoacenaphtho[1,2-k]fluoranthen-3-amine,
N,N-bis(4-methylphenyl)-10-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14
 ICS C09K011-06; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST **electroluminescent** device acenaphtho fluoranthenone
 IT **Electroluminescent** devices
 (org. **electroluminescent** component comprising
 acenaphtho fluoranthenone)
 IT 155732-82-4, 7,14-Dodecanoacenaphtho[1,2-k]fluoranthenone
 515844-28-7 515844-29-8 515844-30-1 **515844-31-2**
 515844-32-3, 7,14-Nonanoacenaphtho[1,2-k]fluoranthenone 515844-33-4
 515844-34-5 **515844-35-6** **515844-36-7**
515844-37-8 515844-38-9 **515844-39-0**
515844-40-3 515844-41-4 515844-42-5 515844-43-6
 515844-44-7 **515844-45-8** **515844-46-9**
515844-47-0 **515844-48-1** 515844-49-2
 515844-50-5
 (org. **electroluminescent** component comprising
 acenaphtho fluoranthenone)

L19 ANSWER 3 OF 9 HCA COPYRIGHT 2004 ACS on STN
 138:153317 Process for preparation of 7,14-diphenylacenaphtho[1,2-k]fluoranthenone derivatives and use for making organic **electroluminescent** devices. Iwakuma, Toshihiro; Arakane, Takashi; Kusumoto, Tadashi (Petroleum Energy Center, Japan; Idemitsu Kosan Co., Ltd.). PCT Int. Appl. WO 2003010127 A1 20030206, 47 pp.
 DESIGNATED STATES: W: CN, IN, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese).
 CODEN: PIXXD2. APPLICATION: WO 2002-JP7103 20020712. PRIORITY: JP 2001-220946 20010723.

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

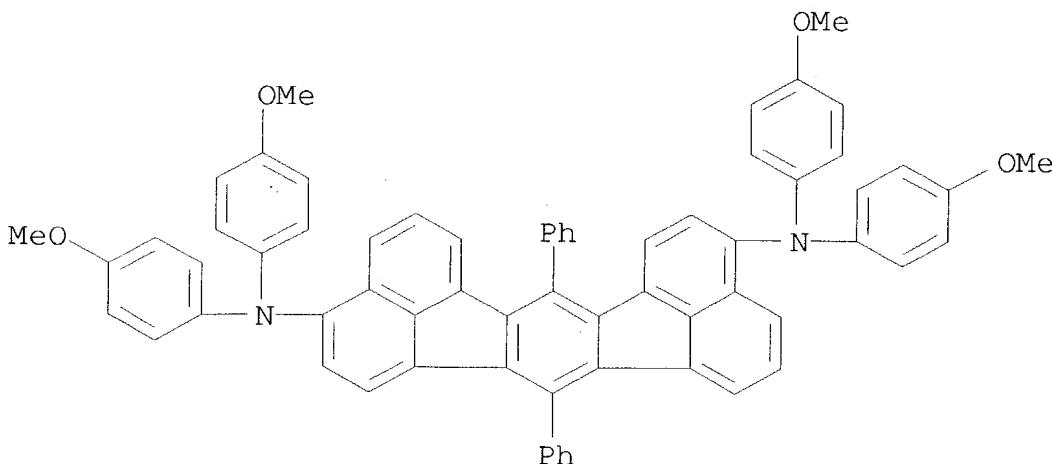
AB This invention pertains to prepn method of novel arom. compds. I and II [wherein X1 - X20 = independently H, alkyl, or alkoxy], and use for making red-emitting org. **electroluminescent** devices, which have high color purity and long life and exhibit high luminous brightness and luminous efficiency even when a low voltage is impressed. For example, the target compd. III and IV were prep'd. by coupling reaction of the corresponding dibromides and bis(4-methoxyphenyl)amine in MePh in the presence of tris(dibenzylideneacetone)dipalladium, (S)-(-)-BINAP, and t-BuONa (82%).

IT 494834-14-9P 494834-15-0P 494834-16-1P
 494834-17-2P 494834-18-3P 494834-19-4P
 494834-20-7P 494834-21-8P

(prepn. of diphenylacenaphthofluoranthenes derivs. by coupling reaction of arom. bromides with amines)

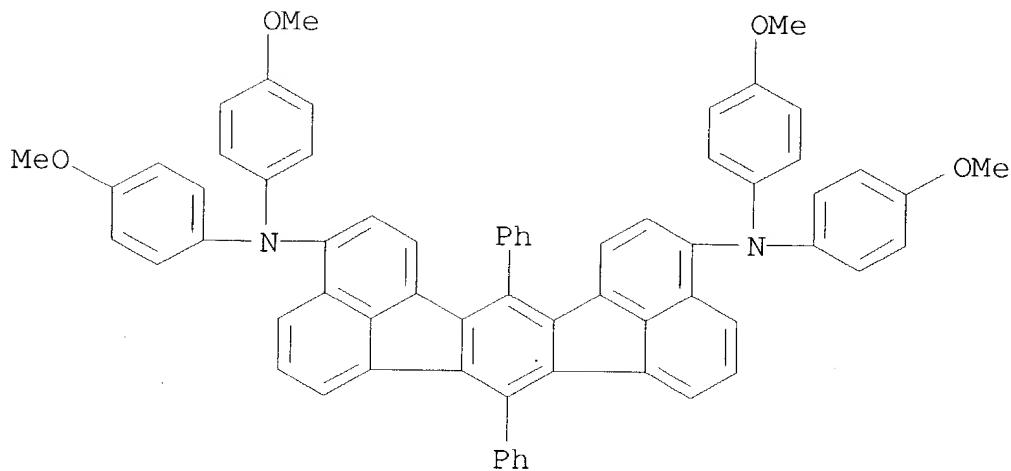
RN 494834-14-9 HCA

CN Acenaphtho[1,2-k]fluoranthen-3,10-diamine, N,N,N',N'-tetrakis(4-methoxyphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



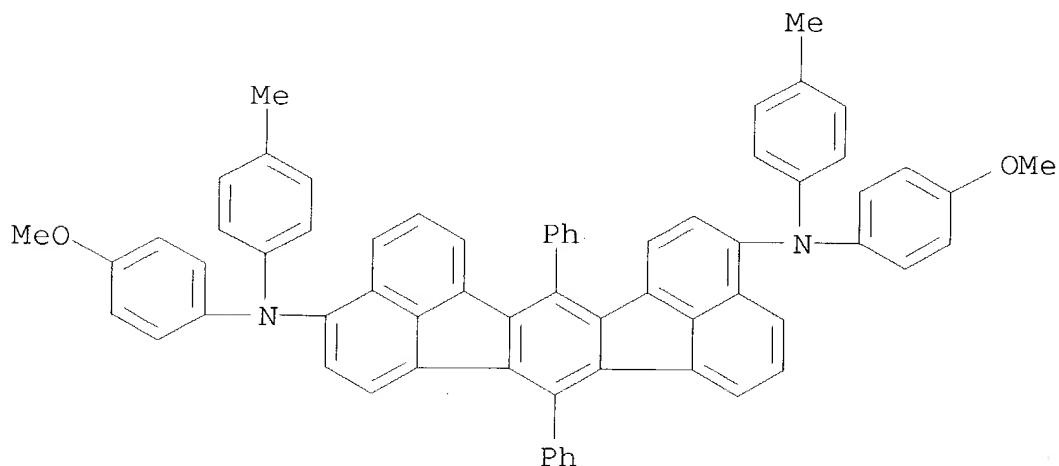
RN 494834-15-0 HCA

CN Acenaphtho[1,2-k]fluoranthen-3,11-diamine, N,N,N',N'-tetrakis(4-methoxyphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



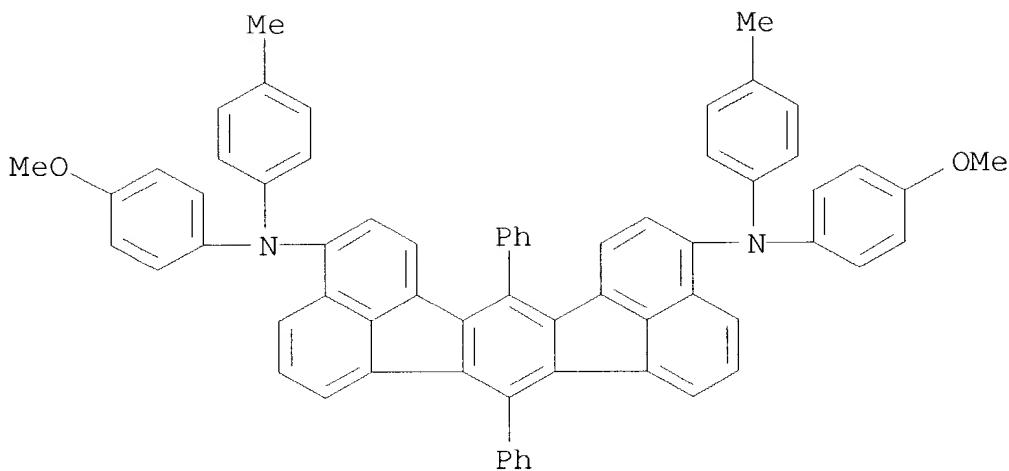
RN 494834-16-1 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N'-bis(4-methoxyphenyl)-N,N'-bis(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)

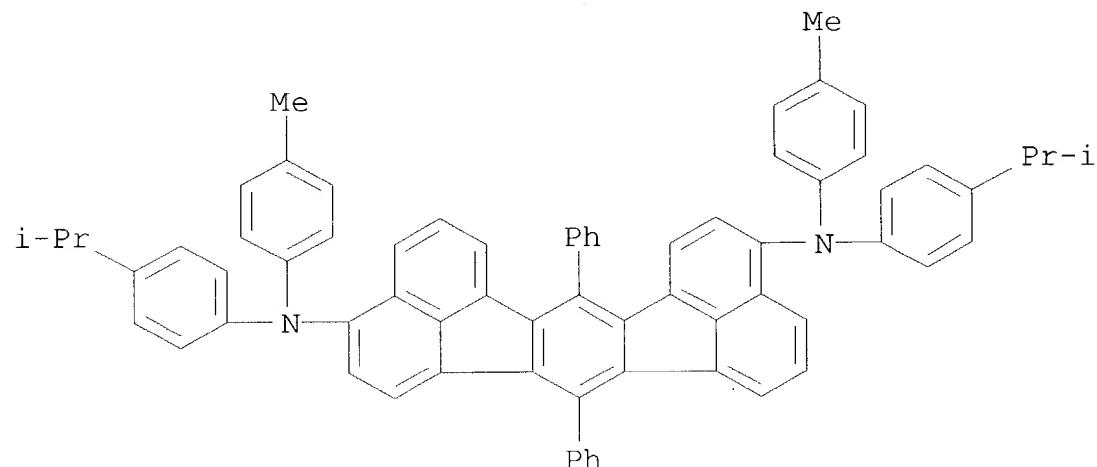


RN 494834-17-2 HCA

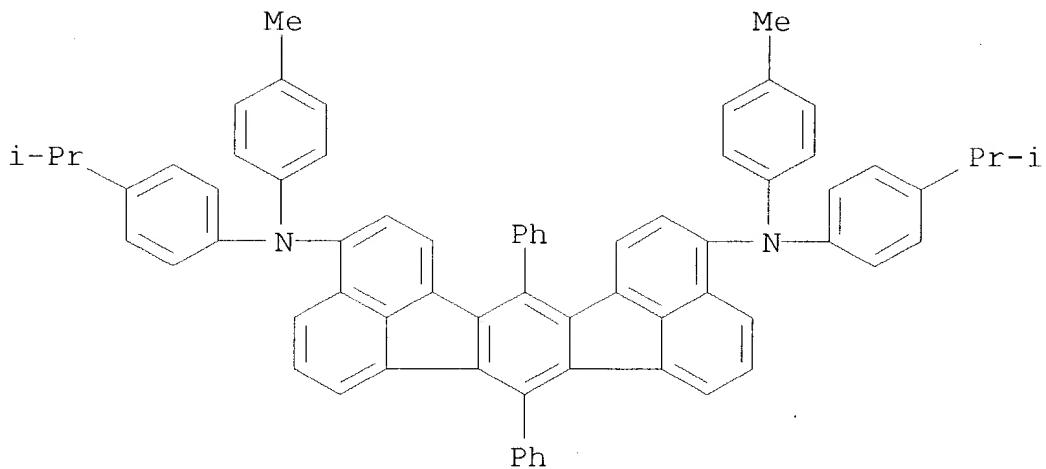
CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N'-bis(4-methoxyphenyl)-N,N'-bis(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



RN 494834-18-3 HCA
 CN Acenaphtho[1,2-k]fluoranthen-3,10-diamine, N,N'-bis(4-methylphenyl)-N,N'-bis[4-(1-methylethyl)phenyl]-7,14-diphenyl- (9CI) (CA INDEX NAME)

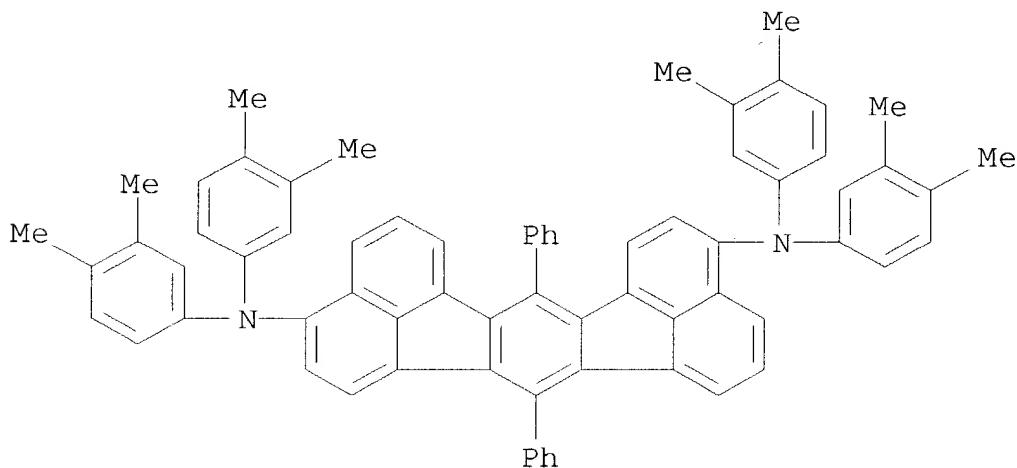


RN 494834-19-4 HCA
 CN Acenaphtho[1,2-k]fluoranthen-3,11-diamine, N,N'-bis(4-methylphenyl)-N,N'-bis[4-(1-methylethyl)phenyl]-7,14-diphenyl- (9CI) (CA INDEX NAME)



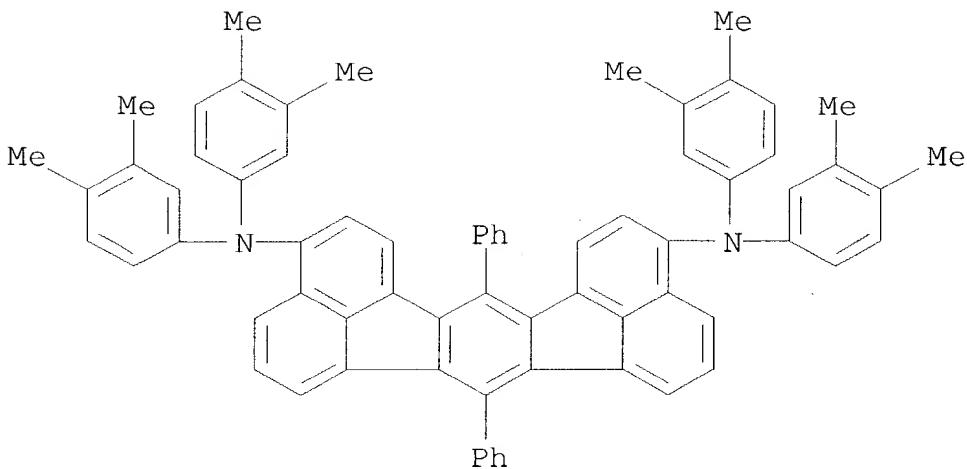
RN 494834-20-7 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N'-tetrakis(3,4-dimethylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



RN 494834-21-8 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N'-tetrakis(3,4-dimethylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C211-61
 ICS C07C217-92; C09K011-06; H05B033-14; H05B033-22
 CC 25-4 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
 ST prepn phenyl amino acenaphthofluoranthene org
electroluminescent device
 IT 494834-14-9P 494834-15-0P 494834-16-1P
 494834-17-2P 494834-18-3P 494834-19-4P
 494834-20-7P 494834-21-8P
 (prepn. of diphenylacenaphthofluoranthene derivs. by coupling
 reaction of arom. bromides with amines)

L19 ANSWER 4 OF 9 HCA COPYRIGHT 2004 ACS on STN

137:70373 Organic **electroluminescent** device. Arakane,
 Takashi; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co.,
 Ltd., Japan). PCT Int. Appl. WO 2002052904 A1 20020704, 48 pp.
 DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH, CY, DE, DK, ES,
 FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN:
 PIXXD2. APPLICATION: WO 2001-JP10789 20011210. PRIORITY: JP
 2000-394152 20001226.

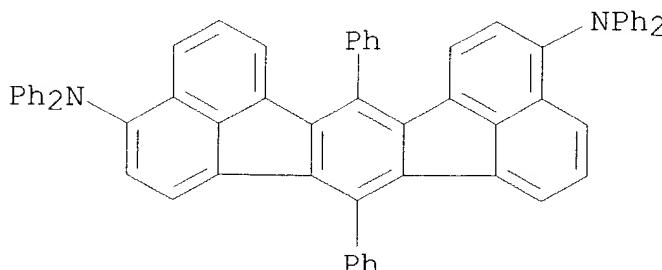
AB The invention refers to an **electroluminescent** device
 wherein the luminescent layer contains at least one hole transport
 material and at least one electron transport material, and the
 energy gap of the hole transport material is less than the energy
 gap of the electron transport material, and the ionization energy of
 the hole transport material is less than or equal to the ionization
 energy of the electron transport material, in order to provide a
 high-efficiency device with long life.

IT 331965-27-6 364765-18-4
 (org. **electroluminescence** device)

RN 331965-27-6 HCA

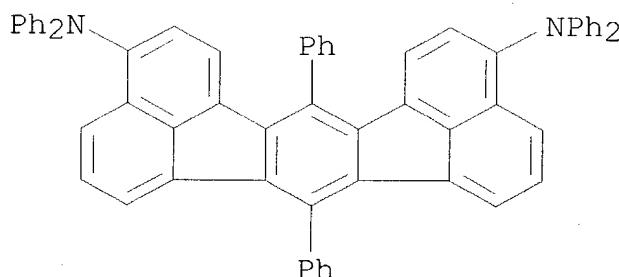
CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-

hexaphenyl- (9CI) (CA INDEX NAME)



RN 364765-18-4 HCA

CN Acenaphtho[1,2-k]fluoranthen-3,11-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS H05B033-22; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device energy gap hole electron transport ionization energy

IT Electron transport

Hole transport

(material; org. **electroluminescence** device)

IT Band gap

Electroluminescent devices

Ionization potential

(org. **electroluminescence** device)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 205930-46-7

331965-27-6 364765-18-4

(org. **electroluminescence** device)

L19 ANSWER 5 OF 9 HCA COPYRIGHT 2004 ACS on STN

136:224030 Organic **electroluminescent** element. Arakane, Takashi; Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2002020693 A1 20020314, 44 pp.

DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK,

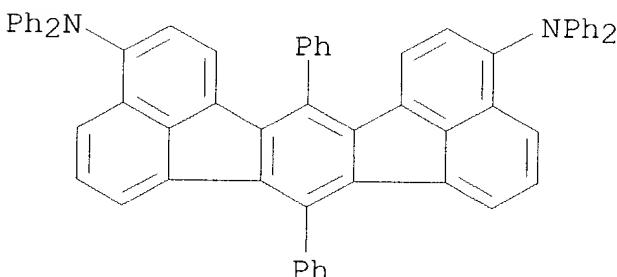
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese).
 CODEN: PIXXD2. APPLICATION: WO 2001-JP7729 20010906. PRIORITY: JP
 2000-271707 20000907.

AB The invention refers to an org. **electroluminescent** element comprising an anode layer, an org. **luminescent** layer, an inorg. compd. layer (or a layer contg. a reducible dopant), and a cathode layer, wherein the org. **luminescent** layer comprises an arom. amine compd. $[Ar_1Ar_2N]pA$, and/or an arom. amine compd. $[Ar_3Ar_4N]qB[NAr_5Ar_6]r$ [A, B, Ar1-6 = C6-60 arom. contg. neither styryl nor alkenyl; and at least one of A, Ar1, Ar2 or one of B, Ar3-6 comprises a fused arom. ring with three or more rings; p, q, r = 1 - 6].

IT 364765-18-4 402824-81-1 402824-82-2
 (org. **electroluminescent** element)

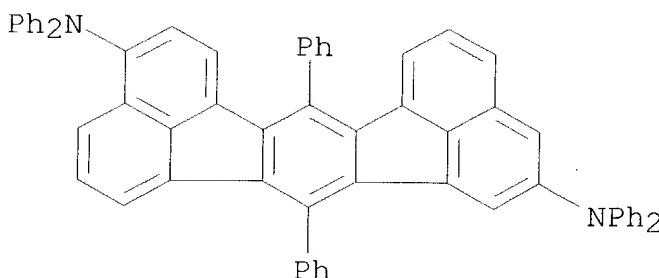
RN 364765-18-4 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



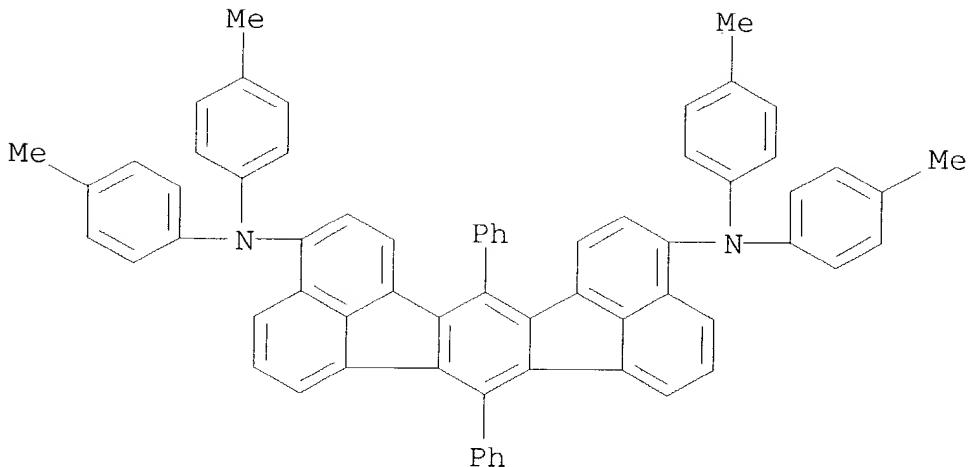
RN 402824-81-1 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,9-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



RN 402824-82-2 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-7,14-diphenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06
 ICS H05B033-14; H05B033-22
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 ST **electroluminescent** device amine arom
 IT **Electroluminescent** devices
 (org. **electroluminescent** element)
 IT 7789-24-4, Lithium fluoride, uses 22441-13-0, Lithium
 mono(2,2,6,6-tetramethyl-3,5-heptanedionato) 177799-16-5
 194296-06-5 227009-37-2 247575-24-2 249288-60-6
364765-18-4 402824-81-1 402824-82-2
 402824-83-3 402824-84-4 402824-85-5 402824-86-6
 (org. **electroluminescent** element)

L19 ANSWER 6 OF 9 HCA COPYRIGHT 2004 ACS on STN
 135:296018 Organic **electroluminescence** device and organic
 luminescent medium. Fukuoka, Kenichi; Hosokawa, Chishio (Idemitsu
 Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2001076323 A1 20011011,
 60 pp. DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH, CY, DE,
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese).
 CODEN: PIXXD2. APPLICATION: WO 2001-JP2587 20010328. PRIORITY: JP
 2000-93976 20000330.

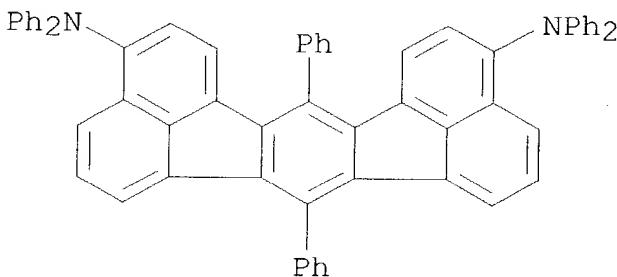
AB The invention relates to an org. **electroluminescence**
 device having a pair of electrodes and an org.
 luminescent medium layer held between them, wherein the
 org. **luminescent** medium layer at least contains an
 electron-transporting compd. and an anthracene deriv. of a specific
 structure, and has excellent heat resistance, long life, and the
 efficiency of luminescence is high. An org.
 luminescent medium preferably used for such an
 electroluminescence device is also disclosed.

IT 364765-18-4

(org. **electroluminescence** device having **org.**
luminescent medium layer of)

RN 364765-18-4 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,11-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST Org **electroluminescence** device anthracene derivIT **Electroluminescent devices**(org.; **luminescent** medium layer of)

IT 2085-33-8, Alq3 14642-34-3 23102-67-2 122648-99-1

172285-72-2 172285-82-4 186412-15-7 249512-71-8 331856-47-4

364765-14-0 364765-16-2 **364765-18-4**(org. **electroluminescence** device having **org.**
luminescent medium layer of)

L19 ANSWER 7 OF 9 HCA COPYRIGHT 2004 ACS on STN

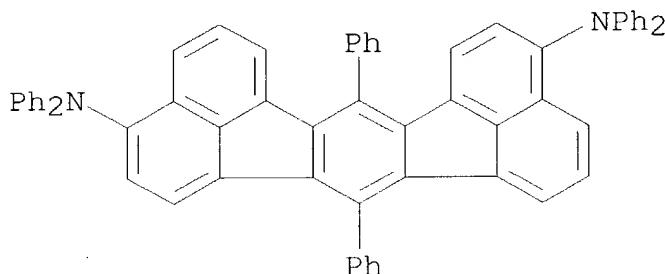
135:84101 White organic **electroluminescence** element. Fukuoka,
Kenichi; Tagami, Sanae; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd.,
Japan). PCT Int. Appl. WO 2001048116 A1 20010705, 39 pp.
DESIGNATED STATES: W: CN, IN, KR; RW: AT, BE, CH, CY, DE, DK, ES,
FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN:
PIXD2. APPLICATION: WO 2000-JP9227 20001226. PRIORITY: JP
1999-372514 19991228; JP 2000-328726 20001027.AB The invention refers to a white org. **electroluminescence**
element comprising a pair of electrodes, and a luminescent layer,
wherein the luminescent layer contains a blue luminescent material
and a fluorescent compd. within at least one fluoranthene skeleton,
pentacene skeleton or perylene skeleton. The
electroluminescence element **emits** a white
light, exhibits high luminescence efficiency and has a long
life, and thus has satisfactory performance capabilities for
practical use.

IT 331965-27-6

(white org. **electroluminescence** element)

RN 331965-27-6 HCA

CN Acenaphtho[1,2-k]fluoranthene-3,10-diamine, N,N,N',N',7,14-hexaphenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescence** deviceIT **Electroluminescent** devices(white org. **electroluminescence** element)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7429-90-5,

Aluminum, uses 7439-93-2, Lithium, uses 50926-11-9, ITO

55035-42-2 65181-78-4, TPD 123847-85-8, α -NPD142289-08-5 331856-47-4 **331965-27-6**(white org. **electroluminescence** element)

L19 ANSWER 8 OF 9 HCA COPYRIGHT 2004 ACS on STN

132:130074 Organic **electroluminescence** device having

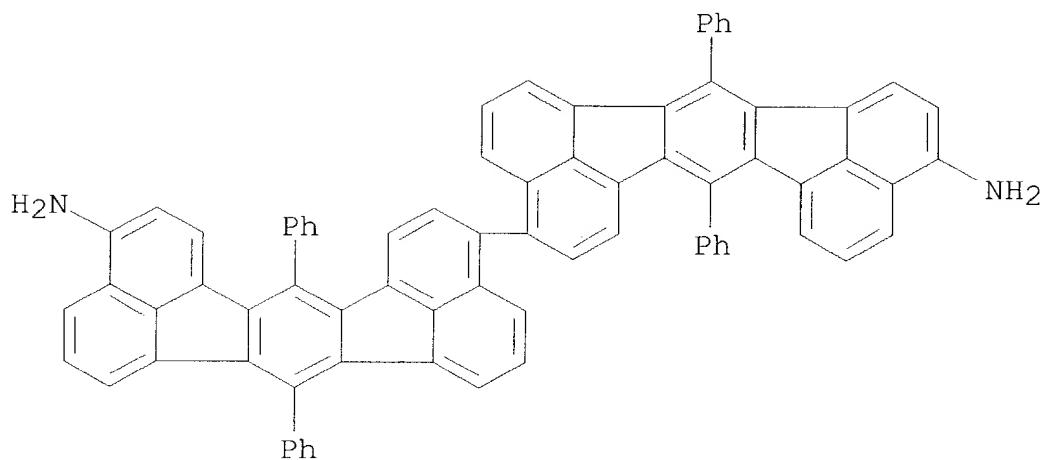
3,3'-biacenaphtho[1,2-k]fluoranthene derivative. Nakatsuka, Masakatsu; Kitamoto, Noriko (Mitsui Chemicals Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000026325 A2 20000125, 100 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-194430 19980709.

AB The org. **electroluminescence** device has a layer contg.3,3'-biacenaphtho[1,2-k]fluoranthene deriv. between a pair of electrodes. The org. **electroluminescence** device provides the bright luminescence.IT **256328-53-7P 256328-54-8P 256328-55-9P****256328-56-0P**(org. **electroluminescence** device having

3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

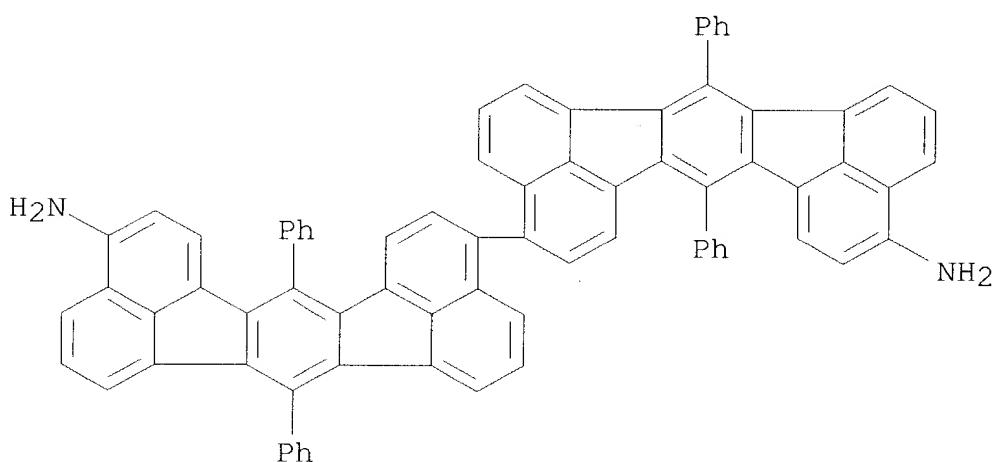
RN 256328-53-7 HCA

CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-10,11'-diamine, 7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256328-54-8 HCA

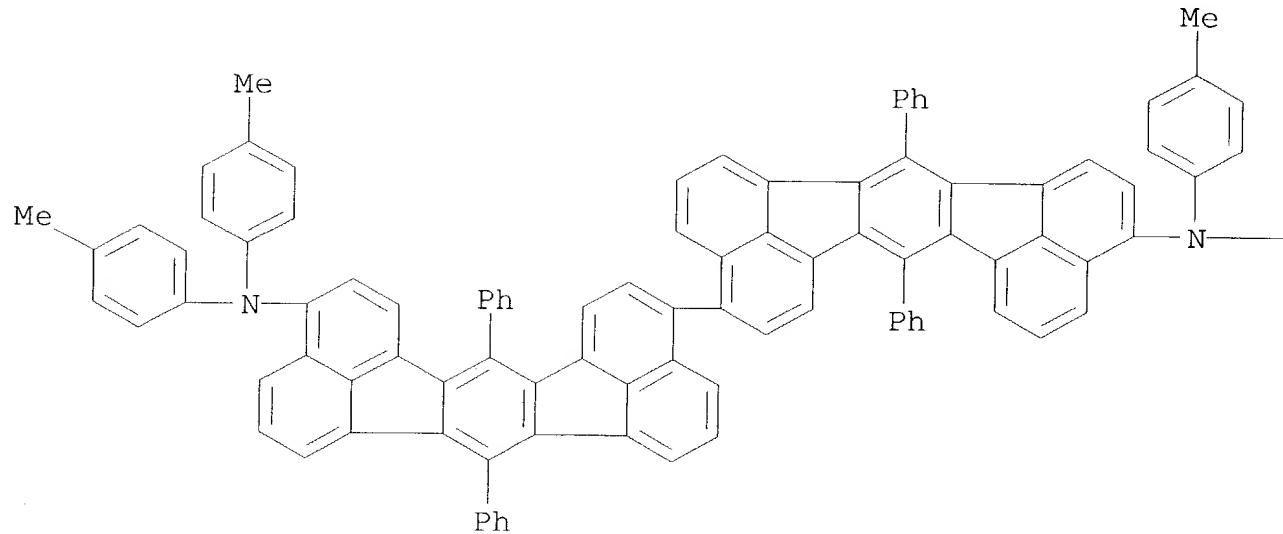
CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-11,11'-diamine,
7,7',14,14'-tetraphenyl- (9CI) (CA INDEX NAME)



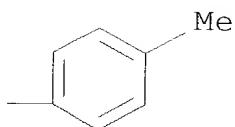
RN 256328-55-9 HCA

CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-10,11'-diamine,
N,N,N',N'-tetrakis(4-methylphenyl)-7,7',14,14'-tetraphenyl- (9CI)
(CA INDEX NAME)

PAGE 1-A



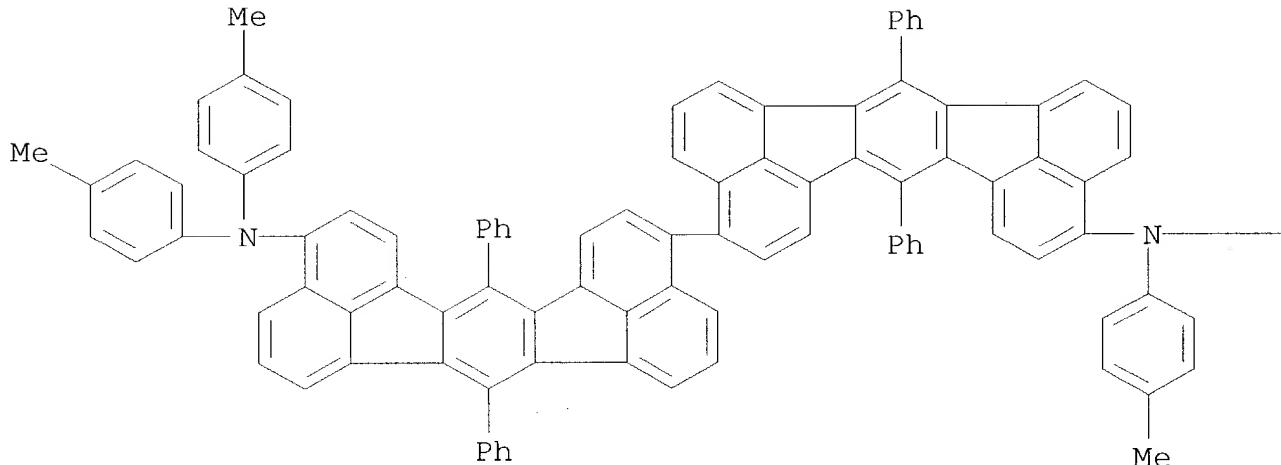
PAGE 1-B



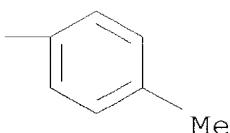
RN 256328-56-0 HCA

CN [3,3'-Biacenaphtho[1,2-k]fluoranthene]-11,11'-diamine,
N,N,N',N'-tetrakis(4-methylphenyl)-7,7',14,14'-tetraphenyl- (9CI)
(CA INDEX NAME)

PAGE 1-A



PAGE 1-B



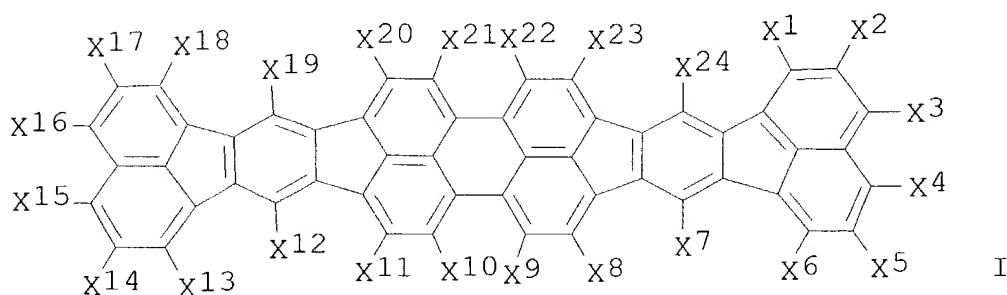
IC ICM C07C013-62
 ICS C07C022-04; C07C025-22; C07C025-24; C07C033-36; C07C039-12;
 C07C043-168; C07C043-20; C07C047-546; C07C049-792; C07C063-46;
 C07C069-33; C07C069-76; C07C205-11; C07C211-50; C07C233-65;
 C07C255-52; C07C321-28; C09K011-06; H05B033-14
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and
 Other Reprographic Processes)
 Section cross-reference(s): 24, 73
 ST org **electroluminescence** device fluoranthene
 IT **Electroluminescent** devices
 (org. **electroluminescence** device having
 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

IT 256327-97-6P 256328-06-0P, 3,3'-Biacenaphtho[1,2-k]fluoranthene
 256328-07-1P 256328-08-2P 256328-09-3P 256328-10-6P
 256328-11-7P 256328-12-8P 256328-13-9P 256328-14-0P
 256328-15-1P 256328-16-2P 256328-17-3P 256328-18-4P
 256328-19-5P 256328-20-8P 256328-21-9P 256328-22-0P
 256328-23-1P 256328-24-2P 256328-25-3P 256328-26-4P
 256328-27-5P 256328-28-6P 256328-29-7P 256328-30-0P
 256328-31-1P 256328-32-2P 256328-33-3P 256328-34-4P
 256328-35-5P 256328-36-6P 256328-37-7P 256328-38-8P
 256328-39-9P 256328-40-2P 256328-41-3P 256328-42-4P
 256328-43-5P 256328-44-6P 256328-45-7P 256328-46-8P
 256328-47-9P 256328-48-0P 256328-49-1P 256328-50-4P
 256328-51-5P 256328-52-6P **256328-53-7P**
256328-54-8P **256328-55-9P** **256328-56-0P**
 256328-57-1P 256328-58-2P 256328-59-3P 256328-60-6P
 256328-61-7P 256328-62-8P 256328-63-9P 256328-64-0P
 (org. **electroluminescence** device having
 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)
 IT 624-31-7, 4-Iodotoluene 1310-58-3, Potassium hydroxide, reactions
 10486-08-5, Sodium 4-Methylphenylthiolate 20607-43-6,
 Isopropylmercaptan sodium salt 153390-84-2 256327-96-5
 256327-98-7 256327-99-8 256328-00-4 256328-01-5 256328-02-6
 256328-03-7 256328-04-8 256328-05-9
 (org. **electroluminescence** device having
 3,3'-biacenaphtho[1,2-k]fluoranthene deriv.)

L19 ANSWER 9 OF 9 HCA COPYRIGHT 2004 ACS on STN

132:129799 Perylene derivatives and high-luminance organic
electroluminescent devices using them. Nakatsuka,
 Masakatsu; Kitamoto, Noriko (Mitsui Chemicals Inc., Japan). Jpn.
 Kokai Tokkyo Koho JP 2000026324 A2 20000125, 101 pp. (Japanese).
 CODEN: JKXXAF. APPLICATION: JP 1998-187708 19980702.

GI



AB The devices have ≥1 layer(s) contg.

bisacenaphtho[1',2':5,6]indeno[1,2,3-cd:1',2',3'-lm]perylene derivs. between a pair of electrodes. The derivs. comprise I [X1-X24 = H, halo, (un)substituted alkyl, alkoxy, alkylthio, alkenyl, alkenyloxy, alkenylthio, aralkyl, aralkyloxy, aralkylthio, aryl, aryloxy, arylthio, or amino, cyano, OH, NO₂, CO₂R₁, COR₂, OCOR₃; R₁ = H, (un)substituted alkyl, alkenyl, aralkyl, aryl; R₂ = H, (un)substituted alkyl, alkenyl, aralkyl, or aryl, amino; R₃ = (un)substituted alkyl, alkenyl, aralkyl, or aryl; X1-X24 may form (un)substituted alicyclic group].

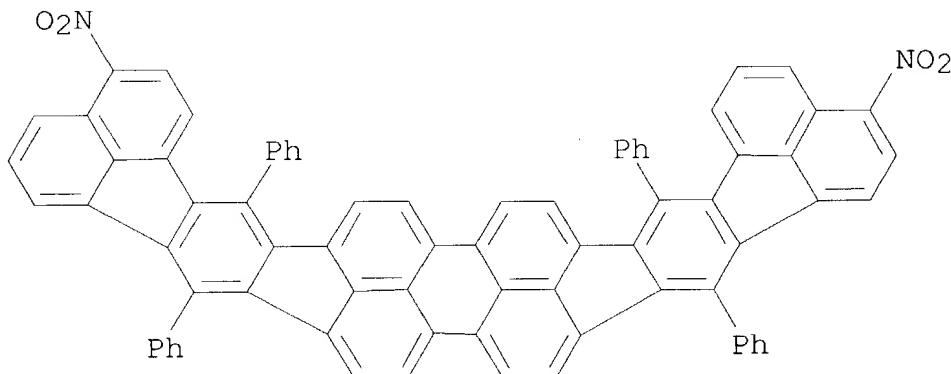
IT 256333-50-3P 256333-51-4P 256333-52-5P

256333-53-6P

(bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

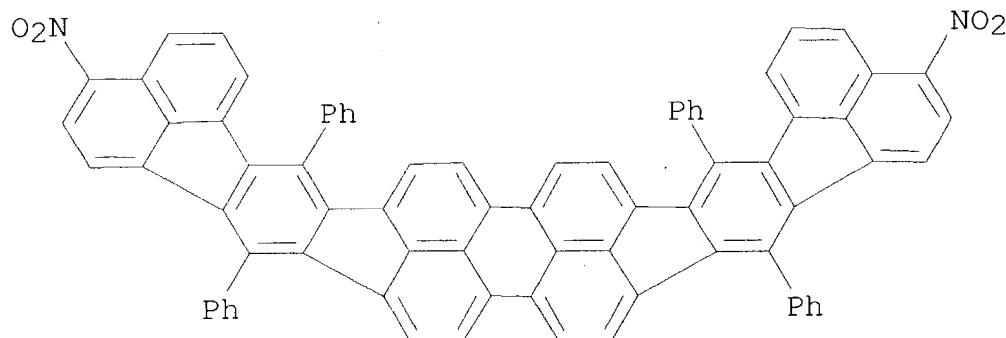
RN 256333-50-3 HCA

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene,
1,13-dinitro-4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



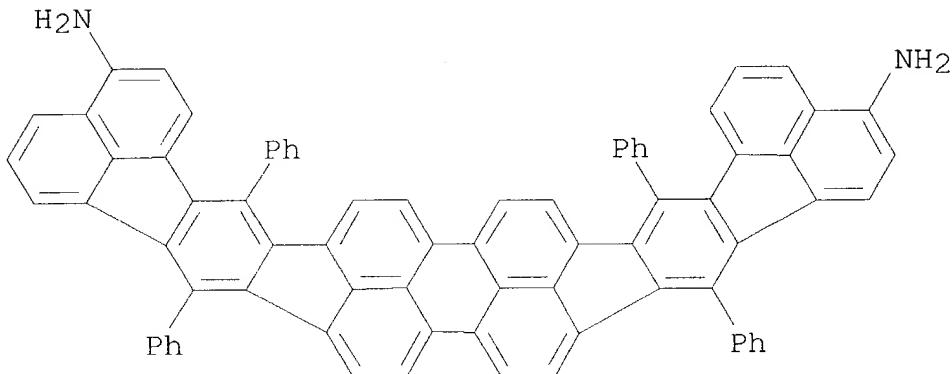
RN 256333-51-4 HCA

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene,
1,12-dinitro-4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



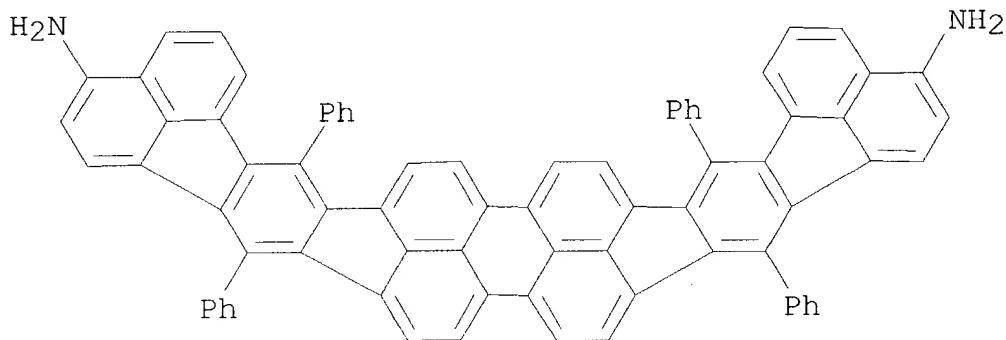
RN 256333-52-5 HCA

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,13-diamine, 4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256333-53-6 HCA

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,12-diamine, 4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)

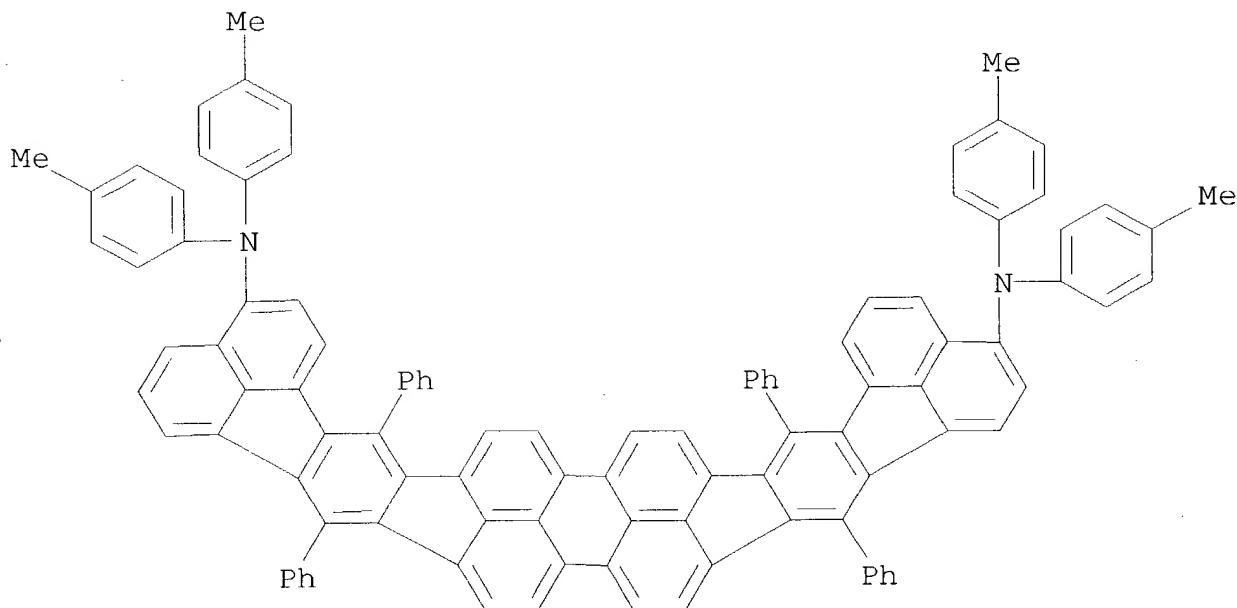


IT 256333-54-7P 256333-55-8P

(bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

RN 256333-54-7 HCA

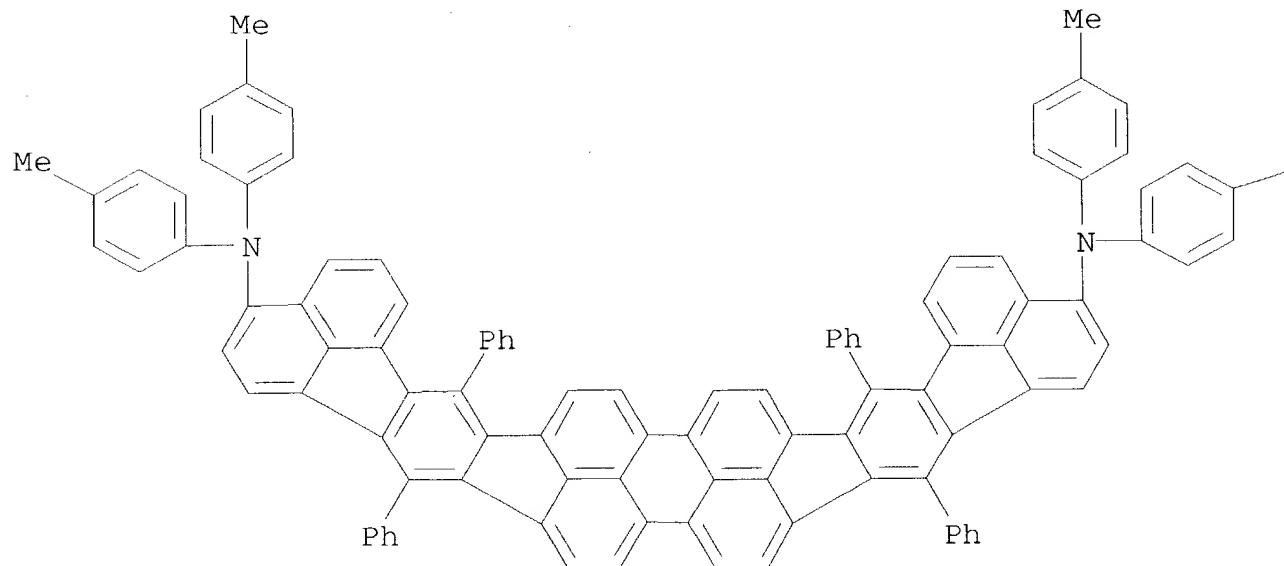
CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,13-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-4,9,16,21-tetraphenyl- (9CI) (CA INDEX NAME)



RN 256333-55-8 HCA

CN Bisnaphth[1',8':5,6,7]-s-indaceno[1,2,3-cd:1',2',3'-lm]perylene-1,12-diamine, N,N,N',N'-tetrakis(4-methylphenyl)-4,9,16,21-tetraphenyl (9CI) (CA INDEX NAME)

PAGE 1-A



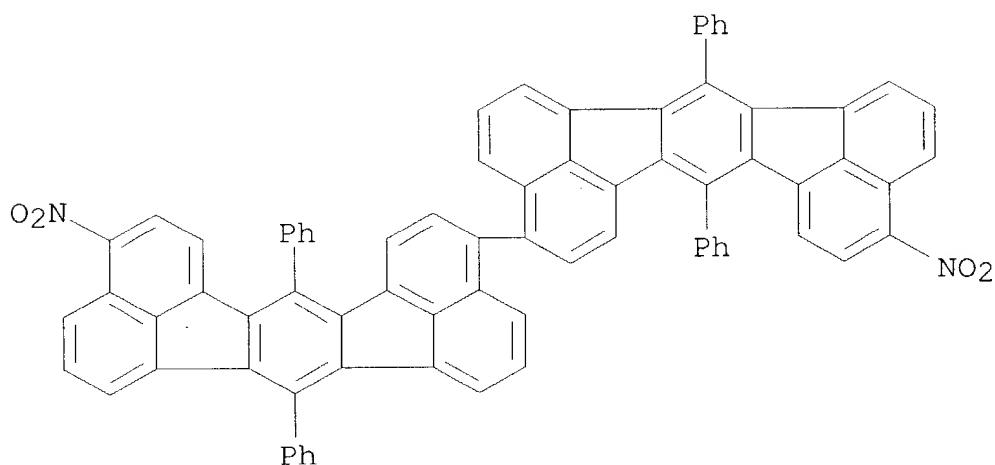
PAGE 1-B

Me

IT 256343-03-0 256343-07-4

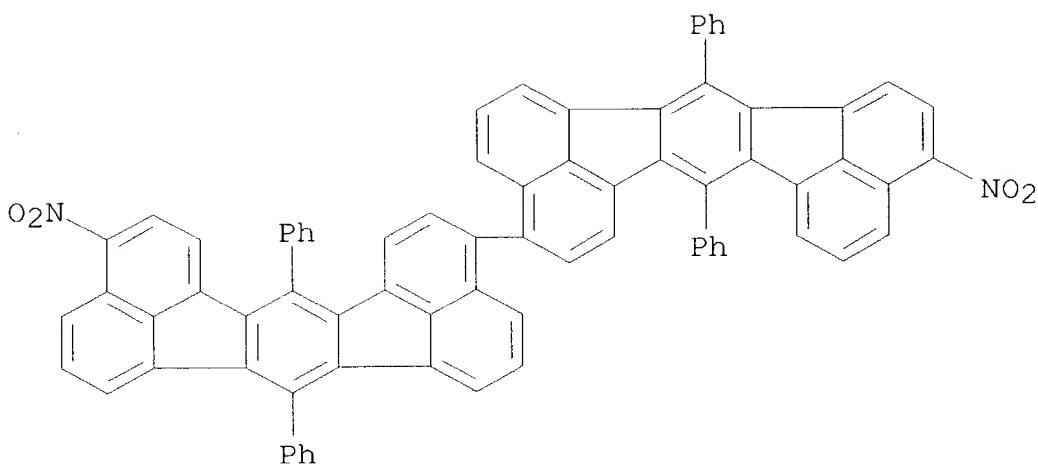
(bis(acenaphthoindeno)perylene derivs. for high-luminance
org. electroluminescent devices)

RN 256343-03-0 HCA

CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 11,11'-dinitro-7,7',14,14'-
tetraphenyl- (9CI) (CA INDEX NAME)

RN 256343-07-4 HCA

CN 3,3'-Biacenaphtho[1,2-k]fluoranthene, 10,11'-dinitro-7,7',14,14'-
tetraphenyl- (9CI) (CA INDEX NAME)



IC ICM C07C013-62
 ICS C07C022-04; C07C025-22; C07C043-174; C07C043-21; C07C043-215;
 C07C043-225; C07C043-275; C07C047-546; C07C063-49; C07C069-78;
 C07C205-06; C07C211-50; C07C211-54; C07C255-52; C07C321-28;
 C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 25

ST acenaphtho indeno perylene **electroluminescent** device;
 luminance improvement **org.**
electroluminescent device acenaphthoindenoperylene

IT **Electroluminescent** devices
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
 org. **electroluminescent** devices)

IT 2085-33-8 24601-13-6 123847-85-8 146162-48-3 146162-52-9
 169224-62-8
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
 org. **electroluminescent** devices)

IT 256329-34-7P 256329-36-9P 256330-85-5P 256333-36-5P
 256333-46-7P 256333-48-9P **256333-50-3P**
256333-51-4P 256333-52-5P 256333-53-6P
 256333-56-9P 256333-58-1P 256333-59-2P
 (bis(acenaphthoindeno)perylene derivs. for high-luminance
 org. **electroluminescent** devices)

IT 231632-01-2P 256329-38-1P 256329-40-5P 256329-42-7P
 256329-43-8P 256329-44-9P 256329-48-3P 256329-49-4P
 256329-51-8P 256329-52-9P 256329-54-1P 256329-60-9P
 256330-81-1P 256330-83-3P 256330-84-4P 256330-86-6P
 256330-87-7P 256330-89-9P 256330-90-2P 256330-91-3P
 256330-92-4P 256330-93-5P 256330-94-6P 256330-95-7P
 256330-96-8P 256330-97-9P 256330-98-0P 256330-99-1P

256331-00-7P	256331-01-8P	256331-02-9P	256331-03-0P	
256331-04-1P	256331-05-2P	256331-07-4P	256331-12-1P	
256331-15-4P	256331-16-5P	256332-24-8P	256332-27-1P	
256332-28-2P	256332-29-3P	256332-31-7P	256332-77-1P	
256332-78-2P	256333-22-9P	256333-24-1P	256333-25-2P	
256333-26-3P	256333-27-4P	256333-28-5P	256333-33-2P	
256333-34-3P	256333-38-7P	256333-40-1P	256333-45-6P	
256333-47-8P	256333-49-0P	256333-54-7P		
256333-55-8P	256333-57-0P	256334-57-3P	256334-58-4P	
256334-59-5P	256334-60-8P	256334-61-9P	256334-62-0P	
256334-65-3P	256343-53-0P	256343-54-1P		
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. electroluminescent devices)				
IT 230636-45-0	256330-88-8			
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. electroluminescent devices)				
IT 256327-97-6P				
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. electroluminescent devices)				
IT 591-50-4, Iodobenzene	624-31-7, 4-Iodotoluene	10486-08-5		
20607-43-6, Isopropylmercaptan	sodium salt	256327-96-5		
256328-08-2	256328-09-3	256328-10-6	256328-11-7	256328-12-8
256328-13-9	256328-14-0	256328-15-1	256328-16-2	256328-17-3
256328-18-4	256328-19-5	256328-26-4	256328-27-5	256328-30-0
256328-31-1	256328-32-2	256328-33-3	256328-34-4	256328-35-5
256328-36-6	256328-37-7	256328-39-9	256328-40-2	256328-41-3
256328-42-4	256328-43-5	256328-44-6	256328-45-7	256328-46-8
256328-47-9	256328-48-0	256328-51-5	256328-52-6	256328-58-2
256328-60-6	256328-61-7	256328-62-8	256328-64-0	256335-10-1
256335-11-2	256335-12-3	256335-13-4	256335-32-7	256337-55-0
256337-68-5	256337-69-6	256337-70-9	256337-73-2	256337-74-3
256337-75-4	256337-77-6	256337-78-7	256337-83-4	256342-76-4
256342-77-5	256342-78-6	256342-79-7	256343-03-0	
256343-07-4	256343-08-5	256343-09-6	256343-10-9	
256343-14-3	256343-15-4	256343-55-2		
(bis(acenaphthoindeno)perylene derivs. for high-luminance org. electroluminescent devices)				